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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,332

04/22/2005

Michael Arndt

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EXAMINER

JOHNSTON, PHILLIP A

ART UNIT

PAPER NUMBER

2881

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DELIVERY MODE

05/13/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/532,332	<b>Applicant(s)</b> ARNDT, MICHAEL	
	<b>Examiner</b> PHILLIP A. JOHNSTON	<b>Art Unit</b> 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Detailed Action***

1. This Office Action is submitted in response to the after Final Amendment filed 4-23-2009, wherein claims 7-18 are pending.

***Examiners Response to Arguments***

2. The examiner agrees with the applicant arguments filed 4-23-2009, and therefore provides a new non-final office action below.

The arguments filed 4-39-2009 regarding the currently applied references are specifically addressed in the rejection below by the addition of the Bucholtz reference.

***Claims Rejection – 35 U.S.C. 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,211,961 to Bayly, in view of Spaeth, USPN 4,158,133, and in further view of Bucholtz, USPN 5,493,442.

5. Regarding claims 7 and 10, Bayly teaches a gas analyzer having;

(a) An infra-red radiation source 10. Col. 4, line 1-9;

(b) Detector 19. Col. 4, line 24-30;

(c) One of interference filters 12-15 positioned between the source and the detector covering visible and infrared wavelengths ranging from  $0.2\mu$  to  $6\mu$ . Col. 4, line 31-44;

(d) Each transmission filter comprises two semi-transparent reflecting layers separated by a transparent medium whose thickness is equal to half the wavelength of light to be transmitted. The combined layers of the filters typically produce a bandpass (transmission characteristic) wavelength that is centered at  $0.5\mu$  increments, where the bandwidth of each filter is about  $0.2\mu$  to  $0.3\mu$ . Col. 4, line 12-36.

Bayly fails to teach layers having transmission characteristics produced by absorption of infrared radiation.

Spaeth discloses a multilayer filter based on absorption, where the base layer is glass and additional layers include Si and Ge. Col. 2, line 45-54; Col. 4, line 1-22; and col. 4, line 34-40.

Spaeth modifies Bayly to provide an absorption filter using a combination of filter materials in a stack of overlying layers that provides sufficient elimination of all wavelengths other than the desired bandpass wavelength.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that Bayly would use the absorbing filter layers of Spaeth to provide filters which have maximum radiation permeability for the operating range of the photo-detector.

The combination of Bayly and Spaeth fails to teach where the first and second layers have different transmission characteristics.

Bucholtz discloses a two layer optical filter where the transmission characteristic of the base layer alone is different from the transmission characteristic of the combined layers, which inherently means that the first and second layers have different transmission characteristics.

Bucholtz modifies the combination of Bayly and Spaeth to provide an optical transmission filter using two layers in direct contact with each other to produce a combined optical transmission effect and where the absorption edge is adjusted by varying the composition of the thin film material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the combination of Bayly and Spaeth would use two different layers having two different transmission characteristics in accordance with Bucholtz to provide a filter where the combined transmission characteristic has an absorption edge at a desired spectral position, thereby limiting the transmitted output of a light source to a specific wavelength range, which is primary objective for using filters in optical applications.

6. Regarding claims 8 and 11, Bayly teaches the use of multi-layered band pass filters, having selectable transmission characteristics, where the combined layers of the filters typically produce a bandpass (transmission characteristic) wavelength over the range from  $0.2\mu$  to  $6\mu$ , centered at  $0.5\mu$  increments, where the bandwidth of each filter is about  $0.2\mu$  to  $0.3\mu$ . Col. 4, line 12-36.

7. Regarding claim 9, the combination of Bayly, Spaeth and Bucholtz discloses the use of glass, Silicon, and Germanium layers, as described above regarding claim 7.

8. Regarding claim 12, Bayly discloses the use of Fabry-Perot filters. Col. 4, line 1-5.

9. Regarding claims 13, 14, 16, and 17, Bayly discloses locating the filter layers in a line of transmission from the source. Col. 4, line 1-9.

10. Regarding claims 15 and 18, the combination of Bayly, Spaeth and Bucholtz discloses layers that are serially placed on top of each other as described above regarding claims 7 and 10, and where layers are deposited on both surfaces of a transparent material (directly contacting).

11. Regarding claims 19-24, the combination of Bayly, Spaeth and Bucholtz discloses all the limitations of claims 19-24, as pointed out above regarding claims 7 and 10, and particularly regarding the location of the operating frequency range, which is included in the description above as the combined transmission characteristic having an absorption edge at a desired spectral position, thereby limiting the transmitted output of a light source to a specific wavelength range.

### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:00 am to 4:00 pm. If attempts to

reach the examiner by telephone are unsuccessful, the examiners supervisor Robert Kim can be reached at (571)272-2293. The fax phone number for the organization where the application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PAJ

May 9, 2009

/David A Vanore/

Primary Examiner, Art Unit 2881

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